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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/528,238

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Norihito Naito

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EXAMINER

EVANS, GEOFFREY T

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/528,238	Applicant(s) NAITO ET AL.	
	Examiner GEOFFREY T. EVANS	Art Unit 2852	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 February 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-31 is/are pending in the application.
- 4a) Of the above claim(s) 11-31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 3-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyamoto (2002/0071689), in view of Yamauchi (7,274,884).

Regarding claim 1, and claims 3-10 depending therefrom, Miyamoto discloses an image forming apparatus operable in a first image formation mode for forming an image on an image bearing member (**see paragraph [0063]**) by using developer under a first predetermined image forming condition ("**fine**" mode; **see paragraph [0096]**) and a second image formation mode for forming an image on an image bearing member by using developer under a second image forming condition ("**fine edge draft**" mode; **see paragraph [0096]**) which is different from the first predetermined image forming condition (**see paragraph [0096]**) and is set so that an amount of consumption of developer with respect to an identical image in the second image formation mode is smaller than that in the first image formation mode (**see paragraph [0096]**), the apparatus comprising:

a storing device configured to store information on an amount of usage of the image bearing member (**see paragraph [0101]; counts number of copies made; that inherently tracks usage of the photoconductor**);

an image processing controller configured to discriminate a size of a concentrated pixel area in image information when the second image formation mode is set **(see paragraph [0096] and text in figure 22; it finds edges of character and graphic images, and distinguishes them from internal areas; that is equivalent to determining the size of concentrated pixel areas)**; and

a controller configured to set the second image forming apparatus condition in the first image formation mode or the second image formation mode **(controller 2000, see paragraph [0052]; responds to commands from user panel, see paragraph [0064]; including changes in toner consumption mode, see paragraphs [0071] and [0073]; can select between these two modes in particular, see paragraphs [0071], [0073], and [0096])**,

wherein said controller, in a state in which said controller is configured to set said image forming apparatus in the second image formation mode, switches the second image forming condition on the basis of a discrimination result of said image processing controller **(see paragraph [0096]; forms images in “fine draft mode,” and, if selected, prints the edges of the images heavier than the interiors, in response to identification of edges and interiors, which reads on discrimination of a size of concentrated pixel areas)**, and information stored in said storing device **(see paragraphs [0101], [0125]-[0126], and [0131]; the mode may be selected when the usage of the image bearing member exceeds a predetermined threshold, based on stored usage data)**.

Miyamoto does not disclose a storing device configured to store *threshold* information on an amount of usage of the image bearing member, or wherein said controller, in a state in which said controller is configured to set said image forming apparatus in the second image formation mode, switches the second image forming condition *when the amount of usage of the image bearing member reaches a predetermined threshold represented by predetermined threshold information* on the basis of a discrimination result of said image processing controller.

Yamauchi discloses a storing device configured to store threshold information on an amount of usage of the image bearing member (**see column 7, lines 40-59; column 8, lines 3-9 and 57-61; column 13, lines 25-36 and 51-65; and column 15, lines 56-68**).

It would have been obvious to one of ordinary skill in this art at the time the invention was made, to modify the invention of Miyamoto such that the storing device were configured to store threshold information on an amount of usage of the image bearing member, as in the invention of Yamauchi, in order to determine when to make adjustments to processing conditions, to compensate for changes in the image bearing member resulting from usage, as discussed by Yamauchi (**see column 15, lines 35-50; and column 16, lines 61-67**).

Yamauchi further discloses a controller, in a state in which said controller is configured to set an image forming apparatus in a second image formation mode, switches the second image forming condition when the amount of usage of the image bearing member reaches a predetermined threshold represented by predetermined

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threshold information **(see column 13, lines 25-36 and 51-65; and column 15, lines 35-50 and 56-68; changing processing conditions of image formation meets changing image formation modes; also the change is done when the amount of usage of the image bearing member reaches a predetermined threshold represented by predetermined threshold information).**

It would have been obvious to one of ordinary skill in this art at the time the invention was made, to modify the combination of Miyamoto and Yamauchi such that the controller, in a state in which said controller is configured to set the image forming apparatus in the second image formation mode, switches the second image forming condition when the amount of usage of the image bearing member reaches a predetermined threshold represented by predetermined threshold information, as discussed by Yamauchi, in order to compensate for changes in the image bearing member resulting from usage, as discussed by Yamauchi **(see column 15, lines 35-50; and column 16, lines 61-67).**

Regarding claim 3, Miyamoto discloses that in the apparatus identified with that according to Claim 1, said controller changes the second image forming condition depending on whether the concentrated pixel area is larger or smaller than a predetermined size **(see paragraph [0096]; in “fine edge draft” mode, it reduces the density less at the edges than in the interior of a toner image, which meets this limitation).**

Regarding claim 4, Miyamoto does not disclose that in the apparatus identified with that according to Claim 1, a plurality of thresholds represented by the threshold information on the amount of usage of the image bearing member is stored in said storing device, and

said controller switches the second image forming condition when the amount of usage of the image bearing member reaches each of the thresholds represented by the predetermined threshold information stored in said storing device.

Yamauchi discloses an apparatus such as that according to Claim 1, wherein the information on the amount of usage of the image bearing member is predetermined threshold information **(tracks photoconductor usage; makes adjustments when it reaches certain thresholds; see column 8, lines 57-61)**, and said controller changes a second image forming condition when the amount of usage of the image bearing member reaches a predetermined threshold represented by the predetermined threshold information **(changes toner consumption mode; see column 16, lines 45-54)**.

It would have been obvious to one of ordinary skill in this art at the time the invention was made, to modify the combination of Miyamoto and Yamauchi to store predetermined threshold information on the amount of usage of the image bearing member, as discussed by Yamauchi, so that the invention can determine when to change usage settings to meet operational specifications as the part wears, as noted by Yamauchi **(see column 7, lines 40-59)**.

It would have been obvious to one of ordinary skill in this art at the time the invention was made, to modify the combination of Miyamoto and Yamauchi such that said controller changes the second image forming condition when the amount of usage of the image bearing member reaches a predetermined threshold represented by the predetermined threshold information, as discussed by Yamauchi, in order to compensate for changes in operational conditions and maintain image quality, as noted by Yamauchi **(see column 7, lines 40-59; and column 16, lines 18-23 and 61-67)**.

Regarding claim 5, and claim 6 depending therefrom, Miyamoto discloses that in the apparatus identified with that according to Claim 1,

said image forming apparatus further comprises an exposure device configured to expose the image bearing member **(electrophotography; see paragraph [0063]; as Yamauchi explains in column 1, lines 21-31; this requires such an exposure device)**;

Miyamoto does not disclose that the second image formation condition includes an exposure operation condition on the exposure device.

Yamauchi discloses a second image formation condition including an exposure operation condition on the exposure device **(different mode is changing exposure operation condition; see column 16, lines 54-60)**.

It would have been obvious to one of ordinary skill in this art at the time the invention was made, to modify the combination of Miyamoto and Yamauchi, such that the second image formation condition includes an exposure operation condition on the

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exposure device, as discussed by Yamauchi, in order to compensate for changes in operational conditions and maintain image quality, as noted by Yamauchi **(see column 7, lines 40-59; and column 16, lines 18-23 and 61-67).**

Regarding claim 6, the modification made in the rejection of claim 5 further teaches that in the apparatus identified with that according to claim 5, the exposure operation condition is an exposure time or luminous energy of said exposure device **(see the foregoing rejection of claim 5; and column 16, lines 18-23 and 61-67).**

Regarding claim 7, and claim 8 depending therefrom, Miyamoto discloses that in the apparatus identified with that according to Claim 1, said apparatus includes a charging member configured and positioned to electrically charge the image bearing member and a developing member configured and positioned to supply the developer to the image bearing member **(electrophotography; see paragraph [0063]; as Yamauchi explains in column 1, lines 21-55; this requires said members).**

Miyamoto does not disclose that the second image forming condition comprises a charging condition of the charging member and a developing condition of the developing member.

Yamauchi discloses a second image formation condition comprising a charging condition of the charging member and a developing condition of the developing member **(see column 16, lines 54-60).**

It would have been obvious to one of ordinary skill in this art at the time the invention was made, to modify the combination of Miyamoto and Yamauchi such that

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the second image forming condition comprises a charging condition of the charging member and a developing condition of the developing member, as discussed by Yamauchi, in order to compensate for changes in operational conditions and maintain image quality, as noted by Yamauchi **(see column 7, lines 40-59; and column 16, lines 18-23 and 61-67).**

Regarding claim 8, the modification made in the rejection of claim 7 further teaches that in the apparatus identified with that according to Claim 7, the charging condition is a bias voltage applied to the charging member and the developing condition is a bias voltage applied to the developing member **(see the foregoing rejection of claim 5; and column 16, lines 18-23 and 61-67).**

Regarding claim 9, and claim 10 depending therefrom, Miyamoto does not disclose that in the apparatus identified with that according to Claim 1, the image bearing member and said storing device are integrally supported to form a cartridge which is detachably mountable to the image forming apparatus.

Yamauchi discloses an apparatus such as that according to claim 1, wherein the image bearing member and said storing device are integrally supported to form a cartridge which is detachably mountable to the image forming apparatus **(see column 1, lines 35-42).**

It would have been obvious to one of ordinary skill in this art at the time the invention was made, to modify the combination of Miyamoto and Yamauchi such that the image bearing member and said storing device are integrally supported to form a

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cartridge which is detachably mountable to the image forming apparatus, as discussed by Yamauchi, in order to simplify maintenance, as noted by Yamauchi **(see column 1, lines 32-35)**.

Regarding claim 10, Miyamoto does not disclose that in the apparatus identified with that according to Claim 9, the cartridge further comprises the charging member or the developing member.

Yamauchi discloses an apparatus such as that according to Claim 9, wherein the cartridge further comprises the charging member or the developing member **(see column 1, lines 37-39)**.

It would have been obvious to one of ordinary skill in this art at the time the invention was made, to modify the combination of Miyamoto and Yamauchi such that the cartridge further comprises the charging member or the developing member, as discussed by Yamauchi, in order to simplify maintenance, as noted by Yamauchi **(see column 1, lines 32-35)**.

Response to Arguments

Regarding Applicant's remarks in the response filed 2/26/2009, Examiner concedes that the current amendment overcomes the specific interpretation of the cited references relied upon in the prior rejection. However, the claims are still unpatentable over the Miyamoto and Yamauchi references as discussed in the foregoing rejections. The new grounds of rejection resulted from further search and consideration necessitated by the current amendment.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GEOFFREY T. EVANS whose telephone number is (571)272-2369. The examiner can normally be reached on 9 AM - 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Gray can be reached on (571) 272 2119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David M Gray/
Supervisory Patent Examiner,
Art Unit 2852

GTE